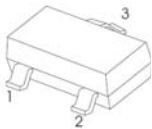


DESCRIPTION

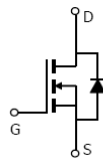
The AO3404 use advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. This device is suitable for use as a load switch or in PWM applications. The source leads are separated to allow a Kelvin connection to the source, which may be used to bypass the source inductance.

SOT-23



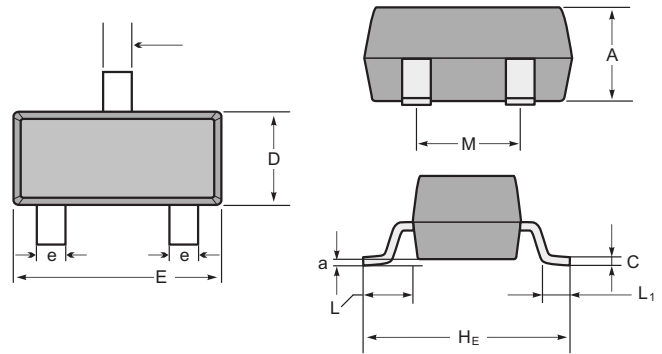
- 1. GATE
- 2. SOURCE
- 3. DRAIN

Equivalent Circuit



Package Marking and Ordering Information

| Product ID | Marking |
|------------|---------|
| AO3404 | A49T |



SOT-23 mechanical data

| UNIT | A | C | D | E | He | e | M | L | L1 | a | |
|------|-----|-----|------|-----|-----|-----|-----|------|------------|------------|------|
| mm | max | 1.1 | 0.15 | 1.4 | 3.0 | 2.6 | 0.5 | 1.95 | 0.55 (ref) | 0.36 (ref) | 0.0 |
| | min | 0.9 | 0.08 | 1.2 | 2.8 | 2.2 | 0.3 | 1.7 | | | 0.15 |
| mil | max | 43 | 6 | 55 | 118 | 102 | 20 | 77 | 22 (ref) | 14 (ref) | 0.0 |
| | min | 35 | 3 | 47 | 110 | 87 | 12 | 67 | | | 6 |

Maximum ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|-----------------|----------|---------------------------|
| Drain-source voltage | V_{DS} | 30 | V |
| Gate-source voltage | V_{GS} | ± 20 | V |
| Continuous drain current ($t \leq 10\text{s}$) | I_D | 5.8 | A |
| Pulsed drain current * | I_{DM} | 30 | A |
| Thermal resistance from junction to ambient | $R_{\theta JA}$ | 357 | $^\circ\text{C}/\text{W}$ |
| Junction temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55~ 150 | $^\circ\text{C}$ |

* Repetitive rating : Pulse width limited by maximum junction temperature.

AO3404

$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

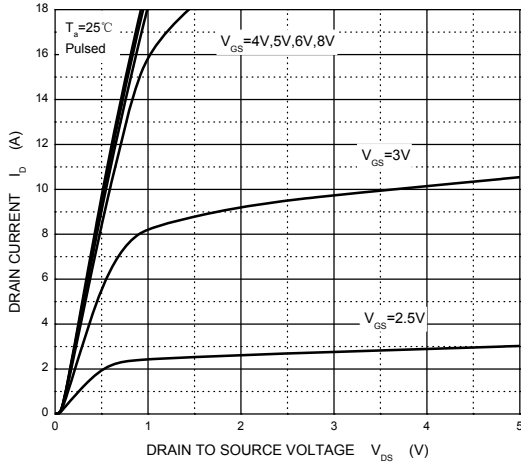
| Parameter | Symbol | Test Condition | Min | Typ | Max | Units |
|--------------------------------------|---------------|---|-----|------|-----------|------------|
| STATIC PARAMETERS | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = 250\mu A$ | 30 | | | V |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = 30V, V_{GS} = 0V$ | | | 1 | μA |
| Gate-body leakage current | I_{GSS} | $V_{GS} = \pm 20V, V_{DS} = 0V$ | | | ± 100 | nA |
| Gate threshold voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250\mu A$ | 1 | 1.4 | 3 | V |
| Drain-source on-resistance (note 1) | $R_{DS(on)}$ | $V_{GS} = 10V, I_D = 5.8A$ | | 19 | 30 | m Ω |
| | | $V_{GS} = 4.5V, I_D = 4.8A$ | | 31 | 42 | m Ω |
| Forward transconductance (note 1) | g_{FS} | $V_{DS} = 5V, I_D = 5.8A$ | 5 | | | S |
| Diode forward voltage | V_{SD} | $I_S = 1A$ | | | 1 | V |
| DYNAMIC PARAMETERS (note 2) | | | | | | |
| Input capacitance | C_{iss} | $V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$ | | | 820 | pF |
| Output capacitance | C_{oss} | | | 118 | | pF |
| Reverse transfer capacitance | C_{rss} | | | 85 | | pF |
| Gate resistance | R_g | $V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$ | | | 1.5 | Ω |
| SWITCHING PARAMETERS (note 2) | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{GS} = 10V, V_{DS} = 15V,$ $R_L = 2.6\Omega, R_{GEN} = 3\Omega$ | | | 6.5 | ns |
| Turn-on rise time | t_r | | | 3.1 | | ns |
| Turn-off delay time | $t_{d(off)}$ | | | 15.1 | | ns |
| Turn-off fall time | t_f | | | 2.7 | | ns |

Note :

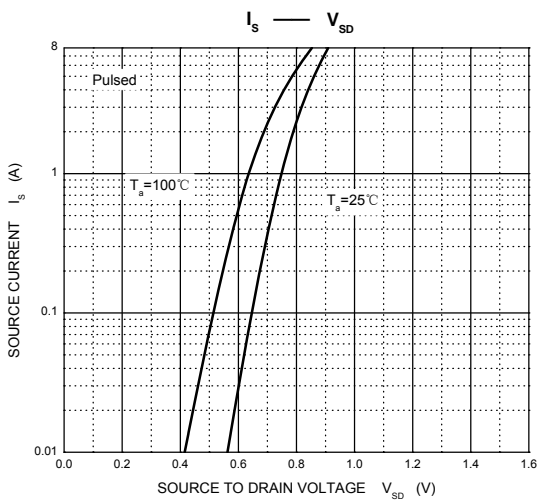
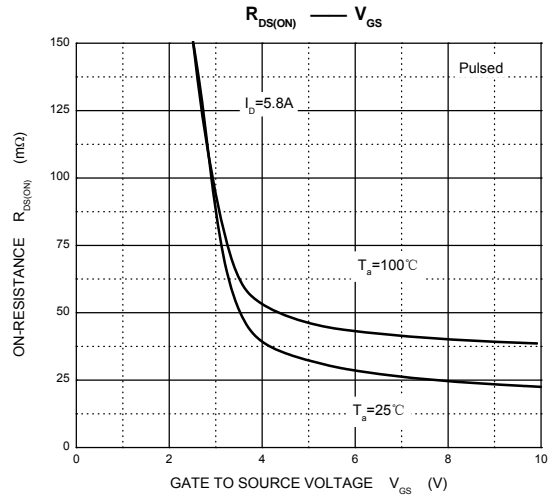
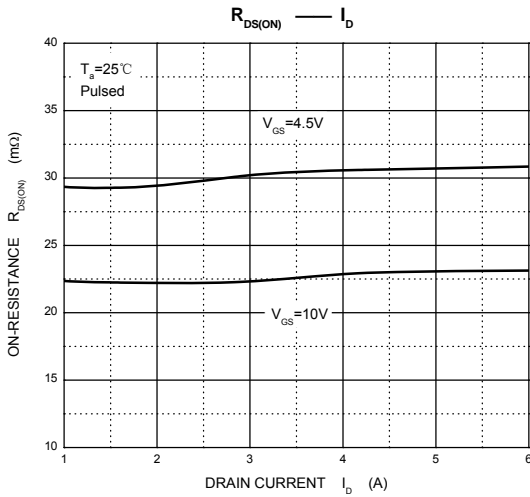
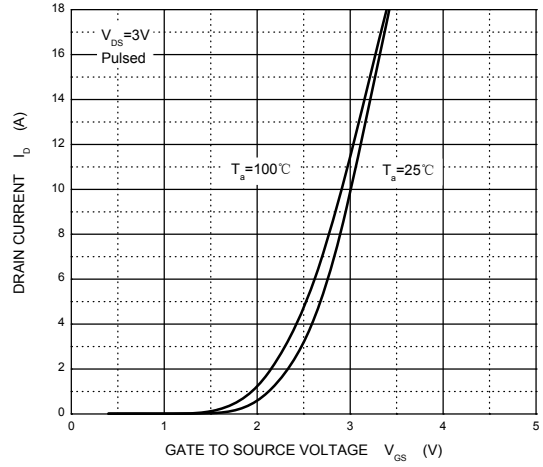
1. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.
2. These parameters have no way to verify.

RATING AND CHARACTERISTIC CURVES (AO3404)

Output Characteristics



Transfer Characteristics



Threshold Voltage

